

## Section 1-3: Distance and Midpoints

By the end of this lesson, you should be able to answer:

- How do you find the distance between two points?
- How do you find the midpoint of a segment?

Define the following:

1. Pythagorean Theorem

2. Distance

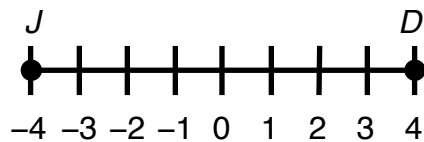
- Formula:

3. Midpoint

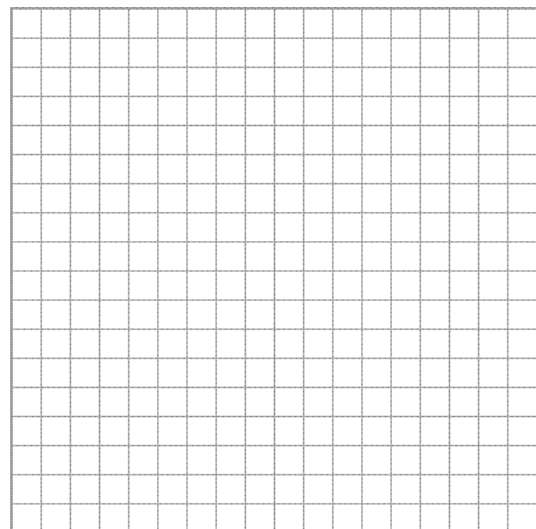
- Formula:

4. Segment Bisector

*Example 1:* Use the number line to find  $DJ$ .



*Example 2:* Graph  $A(3, 2)$  and  $B(6, 8)$ . Then use the Pythagorean Theorem to find  $AB$ .

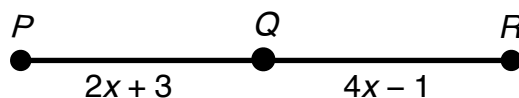


*Example 3:* Use the distance formula to find the distance between  $A(3, 2)$  and  $B(6, 8)$ .

*Example 4:* Find the midpoint of  $\overline{AB}$  for points  $A(3, 2)$  and  $B(6, 8)$ .

*Example 5:* Find the coordinates of  $U$  if  $F(-2, 3)$  is the midpoint of  $\overline{UO}$  and  $O$  has coordinates of  $(8, 6)$ .

*Example 6:* Find  $PQ$  if  $Q$  is the midpoint of  $\overline{PR}$ .



Problem Set:

"Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning." - Albert Einstein